

AVIATION WEEK

A MCGRAW-HILL PUBLICATION

MARCH 1, 1948



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SA 2544

AVIATION WEEK, March 1, 1946

DOMESTIC

Portage Northern Pioneer transport crashed and burned at Los Angeles. A. A. Penick, Northern test pilot, was killed when his plane failed to open. Two other men seriously injured. The cause of the crash is believed to have caused the crash.

Boeing B-29 Superfortresses are now flying training missions from bases in Germany to the Middle East. Although the flights avoid the Balkans, they fly directly over Tel Aviv, Palestine, on their way to Damascus, Saudi Arabia, the latter nations have been confirmed to use by agreement with the Saudi Arabian government. The 1,600 mile flights are made non-stop and are training missions for newly arrived pilots and crews.

Fincham Aviation, Weymouth, Mass., N. C., has inaugurated service on its certified feeder system.

FINANCIAL

Curtis-Wright Corp. won a suit in Maryland Court of Appeals wherein a stockholder claimed loss of \$7000 due to C-W's delayed announcement of the cessation of a dividend. Suit was based on agreement between company and N. Y. Stock Exchange for immediate reporting of dividend actions, but court found agreement gives investor no beneficial rights.

FOREIGN

Northwest Airlines and **British Overseas Airways** have signed a joint agreement establishing round-the-world air service at a cost of \$1700. The two airlines meet at New York and Shanghai, where schedules have been coordinated to permit immediate transfer of passengers from one line to the other. The new service permits scheduled stopovers for six weeks along the route.

Air Vice Marshal Sir Conrad Collier resigned as Controller of Technical and Operational Services, British Ministry of Civil Aviation.

Christopher Clarkson was named British Civil Air Attache, succeeding Nigel Rickard, who will continue as assistant to Clarkson and full Clarkson served with the British Air Commission as one of its American test pilots through out the war.

U. S.-Italian bilateral air transport agreement providing for the exchange of full fifth freedom rights has been signed in Rome. This pact is the third to be signed by the U. S. in accordance with the Bermuda pattern.

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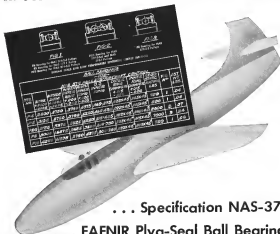
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THE AVIATION WEEK

Report on Air Policy

By guest of the Joint Congressional Air Policy Board, the aircraft manufacturing industry can now contrast its passing game of the past few months. It still has no clear idea of how it is likely to fare in Air Force and Naval Aviation procurement funds in the coming fiscal year.

In deep and solemn contrast to the report of the President's Air Policy Commission, the Congressional Board refrained from making recommendations as to appropriations, ascribing the cause to the failure of the Joint Chiefs of Staff to formulate a master plan—a situation which the Commission found only a hindrance, and not a prohibition to recommendations.

There may be another reason why the Congressional Board made no recommendations as to appropriations. Congressmen are always aware of the jealously guarded power of the appropriations committees in the two houses. They realize that any proposals in the policy report for expenditures would be shadowed and no substance. It is one thing for a group of outsiders to propose larger appropriations. It is quite something else for Congressmen (even some members of the appropriations committees) to try to tell other members what to do. Congressmen have learned that the appropriations committees seldom feel bound to set upon such recommendations.

Another consideration obviously weighed heavily on the minds of the Congressional air policy analysts. Unlike the members of the President's Commission, they at least tried to visualize where great national defense expenditures would fit into the total national budget—not a terrifying effort on its own.

Other than this striking departure from the pattern set by the President's Commission, the Congressional group came up with several on air policy that clarify the earlier report. The two documents, supporting each other in a number of respects, furnish almost certain changes in several important civil aviation situations.

Drastic changes in the organizational structure and duties of CAA seem almost certain to impend. First came the Policy Commission's recommendation for a Department of Civil Aviation, which in addition to CAA's members would take over some of those now exercised by CAB. Until otherwise made plain by the President, that recommendation would appear to be the Administration view. Now comes the Congressional view that there should be an Office of Civil Aviation to replace CAA, some of whose duties would pass to CAB.

This proposal, considered by the Commission's supporters in some respects, also is provocative in the light of the Congressional Board's criticism of CAB. That agency is not doing its work in a businesslike manner,

according to the Congressmen, so it is suggested that CAB be given other duties.

Just the shadow of an even more drastic change in the governmental aviation setup is visible in another Board suggestion. The Federal Government would continue to make the regulations—but enforcement of private flying regulations would be by "non-Federal" persons.

The simplest interpretation is that it means enforcement by state officials—a condition toward which CAA has been working slowly in cooperation with the National Association of State Aviation Officials. If the Congressional Board's recommendations beside legislation of this nature, it is of far-reaching importance. Congressional legislation to give the states a voice in enforcement of private flying regulations would begin a new era.

While this part of the Board's report is similar to a recommendation of the President's Air Policy Commission, it perhaps indicates some horse trading in the Congressional group. Sen. Owen Brewster, Board chairman, has been strong for state participation in aviation affairs. Rep. Carl Haysden, vice chairman, has favored all-embracing Federal control.

The other side of the possible trade would involve the recommendation that large airports, because of an asserted greater national defense value, be given preference over small fields in the construction program.

This proposes a reversal of the philosophy and language of the present airport act. Original approval of the act by CAA and most aviation organizations was on the premise that more small airports were needed to bolster civil aviation. Sen. Brewster was instrumental in having the act worded so that it made it easier for states to sponsor construction of small airports. Arguing the case for more large airports was Rep. Haysden.

First suggestion of the Congressional report is that the Board have closer to national defense considerations in every aspect of aviation than did the President's Commission. But it is not altogether fair to make a point-by-point comparison of the two documents. The basic interests of the two groups differ, and their responsibilities are even more sharply varied.

If the Commission's recommendations ever reach Congress, it will be by a roundabout route through the White House and after perhaps being discussed with the President's own views. The Board, to all intents and purposes, is recommending legislation directly to Congress, and the sponsors of its report presumably are obligated to fight for passage of each legislation.

This situation naturally would tend to result in politically feasible recommendations, rather than in all recommendations that might be desirable.

Even that standpoint, the Congressional Board's report might be considered essentially forthright—and tremendously significant.

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LETTERS

A Slap at Us & Grippers

To the Editor:

Please put me in the same corner with Max Ballou concerning his recent letter to you regarding CAA ineptness. . . It is unfortunate that two others were misguided "grumps" enjoying the privileges of certain publications they had shot in the general direction of those he editorialized and whose flaming heads have so far deserve his "condemnation." This may help to stimulate a publication's side but in almost all cases someone is hurt by these hit and run tactics.

I have been active in the aviation business for the past 15 years as the South Regional Director of the CAA in California. It is a pleasant surprise to go on record in this fashion and state I have never come in contact with a less, more efficient, nor more serious bunch of fellows.

It is quite true I have sometimes had to accept decisions from those that were not to my liking, nor what I find desired. Also, as they know, I have had my arguments with them. These differences, however, neither made them a bunch of muckrakers, nor made a snipe out of me.

I am not going to attempt to list all of the names of the many fine fellows out here under Joe Marrett. Including Joe, some of them, however, are: A. H. Ward, Ed Doherty, Harold Brumby, Karl Olsen, Mr. Barber and Mr. Mahay.

I am sure that all of us who have been in this business for any reasonable length of years are aware that Ted Wright and his staff have always given respectful and careful consideration to any requests we have made for changes in CAA regulations whenever we deemed changes necessary. In every instance, they have reversed their verdict at decision.

It seems to me it is just high time for some people, planning to be in aviation, to get down to the more important matter of trying to find out how to develop new business for themselves, and get rid of the upward general ideas which Strohbecker would probably describe as the Potemkin Blackout industrial complex. . . or something.

Of course CAA personnel are paid by the government and it is an open philosophy of mine that none of this money comes out of my pocket. In the same general way I help to pay the salary of the highway patrolman too. I am not all that much or unfair enough, however, to threaten to get his job simply because he gives me a ticket for speeding. He has a job to do too, and I think most of them honestly try to do it.

From when I sit, I'll sit along with the CAA and their deputies. I don't think any of them are the backwards you speak of. When any of them ever backs enough to have such ideas I know they were not long in giving the war of all the birds.

Send for his play and last Monday morning quarreling against CAA ineptness. O. D. McKee, President & Gen. Mgr. Aero Industries Technical Institute Oakland, Calif.

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The Birdmen's Perch

by Major Al Williams, ALIAS, "TATTERED WING TIPS,"
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 32, Pa



back. When she gets up to speed, he gets back on the wheel (suppose she) and gets off.

Then he climbs a tree (suppose she) and he gets off.

Does he grab the wheel (suppose she) or does he shift into second (suppose she)?

Or does he stop on the fence (suppose she) to stop to rest (he can get away and back under the board to rest why, what a shoggy).

Searched, better investigate this problem before it's too late!

That's what!

HIDDEN DETAILS

Even when he is taking this course, one can look out a window and see to find buildings being torn down.

This building was a hotel which we've been in many times in the past. But we had no idea of the contents and furniture, even details of such a structure and we saw how close they were being stepped from this one.

Hey, wait a minute!

We think we see a dangerous situation arising.

We're referring to available updates of course. There are a couple of them just about ready for the market and frankly, we're worried.

Suppose a guy has been driving a car for 18 years and when he's on the road, he does almost everything automatically, you know, reflexly.

And suppose this same lad has been flying for the same length of time and does most of his work automatically, you know, reflexly.

Okay, so he gets new available plans, lines up with the runway, and starts down the strip, barely looking.



Nearly all pilots remember a Gulf product (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z) (aa) (ab) (ac) (ad) (ae) (af) (ag) (ah) (ai) (aj) (ak) (al) (am) (an) (ao) (ap) (aq) (ar) (as) (at) (au) (av) (aw) (ax) (ay) (az) (ba) (bb) (bc) (bd) (be) (bf) (bg) (bh) (bi) (bj) (bk) (bl) (bm) (bn) (bo) (bp) (bq) (br) (bs) (bt) (bu) (bv) (bw) (bx) (by) (bz) (ca) (cb) (cc) (cd) (ce) (cf) (cg) (ch) (ci) (cj) (ck) (cl) (cm) (cn) (co) (cp) (cq) (cr) (cs) (ct) (cu) (cv) (cw) (cx) (cy) (cz) (da) (db) (dc) (dd) (de) (df) (dg) (dh) (di) (dj) (dk) (dl) (dm) (dn) (do) (dp) (dq) (dr) (ds) (dt) (du) (dv) (dw) (dx) (dy) (dz) (ea) (eb) (ec) (ed) (ee) (ef) (eg) (eh) (ei) (ej) (ek) (el) (em) (en) (eo) (ep) (eq) (er) (es) (et) (eu) (ev) (ew) (ex) (ey) (ez) (fa) (fb) (fc) (fd) (fe) (ff) (fg) (fh) (fi) (fj) (fk) (fl) (fm) (fn) (fo) (fp) (fq) (fr) (fs) (ft) (fu) (fv) (fw) (fx) (fy) (fz) (ga) (gb) (gc) (gd) (ge) (gf) (gg) (gh) (gi) (gj) (gk) (gl) (gm) (gn) (go) (gp) (gq) (gr) (gs) (gt) (gu) (gv) (gw) (gx) (gy) (gz) (ha) (hb) (hc) (hd) (he) (hf) (hg) (hh) (hi) (hj) (hk) (hl) (hm) (hn) (ho) (hp) (hq) (hr) (hs) (ht) (hu) (hv) (hw) (hx) (hy) (hz) (ia) (ib) (ic) (id) (ie) (if) (ig) (ih) (ii) (ij) (ik) (il) (im) (in) (io) (ip) (iq) (ir) (is) (it) (iu) (iv) (iw) (ix) (iy) (iz) (ja) (jb) (jc) (jd) (je) (jf) (jg) (jh) (ji) (jj) (jk) (jl) (jm) (jn) (jo) (jp) (jq) (jr) (js) (jt) (ju) (jv) (jw) (jx) (jy) (jz) (ka) (kb) (kc) (kd) (ke) (kf) (kg) (kh) (ki) (kj) (kk) (kl) (km) (kn) (ko) (kp) (kq) (kr) (ks) (kt) (ku) (kv) (kw) (kx) (ky) (kz) (la) (lb) (lc) (ld) (le) (lf) (lg) (lh) (li) (lj) (lk) (ll) (lm) (ln) (lo) (lp) (lq) (lr) (ls) (lt) (lu) (lv) (lw) (lx) (ly) (lz) (ma) (mb) (mc) (md) (me) (mf) (mg) (mh) (mi) (mj) (mk) (ml) (mm) (mn) (mo) (mp) (mq) (mr) (ms) (mt) (mu) (mv) (mw) (mx) (my) (mz) (na) (nb) (nc) (nd) (ne) (nf) (ng) (nh) (ni) (nj) (nk) (nl) (nm) (nn) (no) (np) (nq) (nr) (ns) (nt) (nu) (nv) (nw) (nx) (ny) (nz) (oa) (ob) (oc) (od) (oe) (of) (og) (oh) (oi) (oj) (ok) (ol) (om) (on) (oo) (op) (oq) (or) (os) (ot) (ou) (ov) (ow) (ox) (oy) (oz) (pa) (pb) (pc) (pd) (pe) (pf) (pg) (ph) (pi) (pj) (pk) (pl) (pm) (pn) (po) (pp) (pq) (pr) (ps) (pt) (pu) (pv) (pw) (px) (py) (pz) (qa) (qb) (qc) (qd) (qe) (qf) (qg) (qh) (qi) (qj) (qk) (ql) (qm) (qn) (qo) (qp) (qq) (qr) (qs) (qt) (qu) (qv) (qw) (qx) (qy) (qz) (ra) (rb) (rc) (rd) (re) (rf) (rg) (rh) (ri) (rj) (rk) (rl) (rm) (rn) (ro) (rp) (rq) (rr) (rs) (rt) (ru) (rv) (rw) (rx) (ry) (rz) (sa) (sb) (sc) (sd) (se) (sf) (sg) (sh) (si) (sj) (sk) (sl) (sm) (sn) (so) (sp) (sq) (sr) (ss) (st) (su) (sv) (sw) (sx) (sy) (sz) (ta) (tb) (tc) (td) (te) (tf) (tg) (th) (ti) (tj) (tk) (tl) (tm) (tn) (to) (tp) (tq) (tr) (ts) (tt) (tu) (tv) (tw) (tx) (ty) (tz) (ua) (ub) (uc) (ud) (ue) (uf) (ug) (uh) (ui) (uj) (uk) (ul) (um) (un) (uo) (up) (uq) (ur) (us) (ut) (uu) (uv) (uw) (ux) (uy) (uz) (va) (vb) (vc) (vd) (ve) (vf) (vg) (vh) (vi) (vj) (vk) (vl) (vm) (vn) (vo) (vp) (vq) (vr) (vs) (vt) (vu) (vv) (vw) (vx) (vy) (vz) (wa) (wb) (wc) (wd) (we) (wf) (wg) (wh) (wi) (wj) (wk) (wl) (wm) (wn) (wo) (wp) (wq) (wr) (ws) (wt) (wu) (wv) (ww) (wx) (wy) (wz) (xa) (xb) (xc) (xd) (xe) (xf) (xg) (xh) (xi) (xj) (xk) (xl) (xm) (xn) (xo) (xp) (xq) (xr) (xs) (xt) (xu) (xv) (xw) (xx) (xy) (xz) (ya) (yb) (yc) (yd) (ye) (yf) (yg) (yh) (yi) (yj) (yk) (yl) (ym) (yn) (yo) (yp) (yq) (yr) (ys) (yt) (yu) (yv) (yw) (yx) (yz) (za) (zb) (zc) (zd) (ze) (zf) (zg) (zh) (zi) (zj) (zk) (zl) (zm) (zn) (zo) (zp) (zq) (zr) (zs) (zt) (zu) (zv) (zw) (zx) (zy) (zz)

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Vol. 43, No. 9

AVIATION WEEK

Mar. 1, 1948

Lack of Strategic Plan Hampers Development of U. S. Air Power

Congressional Air Policy Board scores Joint Chiefs of Staff and inter-service rivalries; recommends civil aviation changes.

Parade of the Joint Chiefs of Staff to draw up an overall strategic plan for the defense of the United States and better unity between the Air Force and Navy have made it impossible to draw a basic program for development of present American air power.

This is the verdict rendered by the Congressional Air Policy Board, headed by Sen. Owen Brewster (R. Me.) after a month's study of aviation's post-war problems. Its report to Congress was made public today (Mar. 1).

Declaring that international agreement on air structure "appears to be in the foreseeable future," the board insisted the only alternative course for the retention of freedom in the maintenance by the United States of "the best and the second best military establishment in the world."

It is the Senate's view, an effective military establishment, it was emphasized, must be built around a unified strategic plan providing for "the coordination of legal objectives, a priority of tasks, a combination of short measures to avoid and Air Force overall competition of civil aviation necessary to ensure that strategic concepts are supportable, and, finally, coordination of air staff personnel." Expanding concerns over the failure of the service to arrive at a unified defense plan, the board referred to the Navy-USAF procedural wrangling and commented that "unusually adverse to service rivalries in the expense of national security, a luxury that we can no longer afford."

The board declared, but refused from making, two five-year programs for military air power—an "offensive" program and a "defensive" program—based on the separately drawn air strength plans of the Navy and Air Force.

► **Offensive Plan**—The "offensive" program would pursue the United States' "most prompt, an effective, continuing and successful air offensive against a major enemy." It would in-

clude the USAF's 70-group program, involving 20,541 personnel, plus a Navy program of 16,500 aircraft, a total of 37,041 aircraft. The level of personnel would be reached in 1953. Thereafter, the program would require an annual USAF procurement of 36 million aircraft parts and an annual Navy procurement of 25 million aircraft parts—a total of 111 million aircraft parts annually.

The "defensive" air power program would be the same as the "offensive" program, without reserve aircraft, and would provide the United States with a large sufficient to withstand an initial blow aimed at crippling the country, leave the basis for a strong territorial defense, and provide effective retaliation. It would not permit the United States to maintain a sustained offensive. Under this plan, there would be an annual USAF procurement of 41 million aircraft parts, plus an annual

Navy procurement of 16 million aircraft parts, a total procurement of 63 million aircraft parts annually.

The board pointed out that three-fourths of the Federal budget is now related to the protection, maintenance or liquidation of war, and highlighted the necessity of reestablishing the fiscal institutions of the U. S. Treasury to determine expenditures for defense.

► **Five-Year Plan**—Five proposed defense annual budgets showed that the proposed "offensive" air power program would boost the Federal budget to over \$45 billion annually and the "defensive" program to a total budget of \$41 billion. This exceeds the board's goal, that "maintaining status yield" \$100 million (now approximately \$40 billion annually) from taxes must be increased, or deficit financing must be resorted to.

The board suggested that when a unified defense plan has been determined, "total requirements of the armed services may be mutually adjusted to meet the total estimated national capability. It is not possible to estimate with accuracy the reduction in the combined military budgets that such a unified plan might make possible, but it is believed that material savings can be effected while at the same time a better and more efficient military establishment can be provided."

Offensive Air Power

Annual Navy Aviation and Air Force budgets under proposed "offensive" air power program (111 million aircraft parts annually)

| Category | Figures in billions of dollars for fiscal years | | | | | |
|--|---|------|------|-------|-------|-------|
| | As Proposed | 1949 | 1950 | 1951 | 1952 | 1953 |
| Appropriation, aircraft program | \$18 | \$12 | \$46 | \$139 | \$128 | \$130 |
| Contract without aircraft | 25 | 31 | 134 | 121 | 96 | 96 |
| Navy Aviation total appropriation | 75 | 120 | 177 | 268 | 201 | 208 |
| USAF Aviation total contract authority | 25 | 31 | 134 | 121 | 96 | 96 |
| AIR FORCE | | | | | | |
| Appropriation, aircraft program | 12 | 38 | 170 | 249 | 180 | 170 |
| Contract authority, aircraft | 45 | 180 | 280 | 320 | 328 | 328 |
| Air Force total appropriation | 130 | 350 | 520 | 650 | 710 | 738 |
| Air Force total contract authority | 45 | 180 | 280 | 320 | 328 | 328 |

Defensive Air Power

Annual Naval Aviation and Air Force budgets under proposed five-year "Defense" or power program (\$5 million aircraft growth annually)

| Category | Figures in billions of dollars for fiscal years | | | | | |
|-------------------------------------|---|------|------|------|------|------|
| | At Present | 1949 | 1950 | 1951 | 1952 | 1953 |
| NAVF | | | | | | |
| Appropriation, aircraft program | 5.25 | 5.45 | 5.27 | 5.58 | 5.96 | 5.96 |
| Contract authority, aircraft | 21 | 37 | 77 | 77 | 77 | 77 |
| Naval Aviation, total appropriation | 26 | 42 | 84 | 84 | 84 | 84 |
| Air Force | | | | | | |
| Appropriation, aircraft program | 32 | 40 | 370 | 240 | 270 | 270 |
| Contract authority, aircraft | 45 | 193 | 240 | 370 | 240 | 270 |
| Air Force, total appropriation | 77 | 333 | 610 | 610 | 540 | 540 |
| Aviation, total contract authority | 66 | 235 | 610 | 610 | 540 | 540 |

► **Desired Plan**—The board demanded that the Joint Chiefs of Staff arrive at a unified defense plan "not later than June 30" to let Congress see effect of the aviation budgets for the coming fiscal year.

Other accommodations of the board on military aviation in combat aviation subcommittee was headed by Rep. Carl Hays (R, Calif.)—

► **The 1947 National Security Act**, and Executive Order 9877 defining the mission of the three services, should be amended to remove disagreement between the Navy and USAF over aviation personnel.

► **Naval Aviation personnel** should be permitted to transfer to USAF.

► **The 1947 National Security Act** provides for the transfer of personnel between the Army and Air Force, but not between the Navy and the other two services. The board pointed out that the USAF now suffers from a dearth of experienced officers in the 45 to 55 age bracket, that the Navy has a substantial surplus of such officers who would be afforded greater opportunity for advancement and utilization of their "know-how" in USAF.

► **The nuclear energy** propulsion for aircraft (NENA) should be given "highest priority" in atomic energy research and development and "every needed resource and facility be devoted to its early accomplishment."

► **A joint task group** for external defense should be established and an early warning capability be extended to all districts to meet an unexpected attack.

► **Transfer of the Air National Guard** to the Air Force move.

► **The Federal Government** sponsorship of development of prototype transport and cargo aircraft, intended pri-

marily for commercial use, but suitable for certain military purposes.

► **Form contracts** should be prepared now for wartime utilization of all aircraft of international air carriers, and for percentages of aircraft of domestic air carriers, by the armed services.

► **The Secretary of National Defense** should review the policies of USAF and the naval air arm to eliminate "tension and rivalry" between the two services in public relations. "The excessive competition for public action between the two is a dangerous practice and reflects the American public an aerial program."

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to be established by statute as a permanent organization, membership, designated by the President, to include representatives of the Government agencies concerned with aviation matters under consideration. Policies of ACC should be adopted by a majority, instead of unanimous vote as at present. A state-wide local advisory panel was proposed as the best method of getting civilian and local government's voice as the formulation of policy.

► **Joint congressional aviation committee** should be established to advise Congress on the defense capabilities of the United States.

► **Civil Aeronautics Board** was criticized for failure "to organize its work in a business-like manner and behaving among its members."

► **Aviation programs** must give priority consideration to big airports, must support small-airports as the national defense backbone in the interests of economy, joint military-civil use of airports should be pushed to the maximum.

► **Federal Government** should continue to have exclusive jurisdiction over establishment of safety regulations applicable to all classes of aircraft and aircraft, but necessary in non-air carrier flying and in aircraft for military aviation and in aircraft to non-federal personnel.

► **Unidentified carriers**, domestic and international, should be placed under economic and safety regulations by CAB.

► **Congress** should consider legislation providing for the transport of all airlines used by air. An air mail post system should be established under congressional rates to be applied which could be used for transporting mail.

► **An earlier airport** in line with the public interest, should be encouraged.

► **Private financing** of new transport projects, particularly of the equipment trust type, should be encouraged.

► **Based successfully** as change in this field in the private sector of the largest 1935 CAA act relating to the parties parties of surface carriers in our front personnel.

► **Conference** rate making by international carriers, as contemplated by the Bermuda agreement, should be continued for the present.

► **Private industry** participation in aeronautical research should be continued and assisted by reference to the past decisions here between Government and private research had done in the 1946 national aeronautical research policy.

► **Utility plan** of National Advisory Committee for Aeronautics and the armed services for physical facilities for aeronautical and aeronautical research and development should be improved.

Veterans Flight Program Cost Totals \$257,000,000 for Year

Budget Bureau reports 2616 schools training 118,400 GI student pilots; asks Congress to limit future training to vocational courses.

By ALEXANDER McSURELY

Veterans' flight training is costing \$218,000,000 a year for tuition, plus \$37,000,000 for veterans' advantage payments, or nearly one third of all the money being expended for all veterans' training under the GI Bill of Rights.

The large proportions of the veterans' flight training program are disclosed in a report by the House of the Budget to the House Veterans Affairs Committee. The report, based on information from the Veterans' Administration as of Nov. 1, 1947, shows:

► **Number of veterans** enrolled for flight training in flight schools operated for profit increased from 64,771 on Nov. 1, 1946, to 118,400 a year later, an 83 percent increase.

► **Number of flight schools** state-approved for GI training increased in the same period from 2111 to 2616, a 24.1 percent increase.

► **Regular private pilot course** of 6 to 20 weeks cost between \$150 and \$300.

► **Regular commercial pilot course** of 30 to 70 weeks cost between \$1500 and \$3000.

► **Total expenditures** for all other education and training the veterans was at an annual rate of \$588,000,000, more than twice the amount expended for flight training. Veterans enrolled in all other educational training numbered 1,741,247 or about 15 times the number of veterans in flight training.

of veterans in the flight program. The report argued Congressional action to revise veterans' legislation, to specify that veterans' training in schools where their elementary and secondary schools and contributions of higher learning" be restricted to vocational purposes and occupational advancement of the veterans. The action would not affect students currently enrolled but would apply to new students after a specified date.

► **Interpretation** of the act a reconstruction should be followed by Congress, the interpretation of which controls training for vocational purposes and occupational advancement would probably determine the date of future GI flight training programs.

Rep. Hiram A. Ransley (R, Ohio), chairman of the House Subcommittee on Veterans' Education, Training, and Rehabilitation, indicated at a recent hearing on flight training that "Congress need not shirk its going along with budget Bureau's recommendations."

Ransley asked H. V. Stirling, assistant VA administrator, whether anyone in VA had written the report for the House of the Budget. Stirling denied that the subcommittee chairman criticized the work of the report and its "conclusion" would be given government approval.

Stirling said the "act-bib,"

Fighters Rejected

The Veterans' Administration "At present, the Navy is not to be asked for either service. Despite the obvious high price tag of this plane—powered by a single Rolls-Royce Merlin II engine—argued—the British have passed it up for the present. Whether they are willing to wait for better two-engine fighters or they have lost hope of better performance from the new Hawker 'Tempest' and the new Glanier 'X'—both powered by single Merlin II's.

The RAF has also passed up the Saunders-Roe SR-A1 flying boat fighter, powered by two Metro-Vick 'Beryl' axial flow turbojets. These prototypes of the plane were ordered, one has been built and the other is under construction and the design is nearly completed. But although Saunders-Roe's chief test pilot says he has not really given the plane a thorough workout, the RAF has been flying since it has had so far—only getting it up to speeds of Mach No. 1.34—and the RAF has not had a chance to test it thoroughly, the decision apparently is based on a feeling that the plane proposed is too heavy for the RAF tactical use.

in a "macho manner" in which the new service will be interested in returning to flying lessons and advertising which offers "a big magic hand" to make veterans "the darling of the stage" and relevance to flight training.

► **High Daring Competition**—The service of training lessons and flight training has been shown by Stirling, however, in talks with aviation people, prior to issuance of the Budget Bureau report. (Associated Press, Nov. 17, 1947).

Other statements in the Budget Bureau's report on veterans' flight training show aviation has against continuing the program, and in some cases are contradictory.

► **Limited Job List**—The report refers to employment by commercial airlines recognized as the one major vocational use of veterans receiving aviation pilot training. Facts are that a large proportion of pilots must then find in civilian industry are doing it in other lines of flying either as instructors, or flying for hire. This does not consider the steady large and growing number



SECOND REPUBLIC XP-12 TO WRIGHT FIELD
Flight view of No. 2 Republic XP-12 shows 50-hp craft on route to Wright Field for Air Force Flight II flight tests. Republic test pilot O. P. Hines completed Phase I company tests, which included 4-6 day flights and 500 mph. dive speeds.

of passengers trained to photo, or permit of persons who have been placed in windows from flight training have not completed advanced training courses." The report stresses that completion of a parallel job course is of no operational benefit whatever to the victim.

The report states that "more than 90 percent of all flight training events are seasonal in purpose." This statement is based on statistics showing that 93

All-Weather Airways Program Backed by Military-Civil Groups

RTCA program gets strong support for 15 year development of electronic airways and traffic control system; cost set at \$1,112,800,000.

By ROBERT ROTZ

First specific blueprint for a modernized federal airways system was strongly endorsed last week by the Congressional Air Policy Board headed by Sen. Owen Brewster (R, Me). The all-weather, electronic airways program was passed by a special committee of the Radio Technical Commission for Aeronautics at the request of the Air Commanding Committee.

RTCA program calls for expenditure of \$1,112,800,000 during the next 15 years for research, production and in

installation of new airways and traffic control equipment. Of this total \$799,000,000 will be charged to national defense budgets, \$75,400,000 to military research and development funds and \$124,000,000 to civil aviation agencies. The plan will provide facilities to handle a fleet of 100,000 aircraft. This will include 15,000 military planes, 10,000 commercial airplanes and 50,000 private planes equipped for instrument flying.

Two Phase Program—The program will proceed in two phases—a five-year

effort program containing electronics and now available to alleviate the worst of current bad weather problems and a target program providing completely accurate navigation and traffic control system capable of handling the 100,000 plane fleet in all-weather operations by 1960.

Support significance of the RTCA program in the improvement of all military, government and private aviation safety calls to back a single plan. Many favorable statements leading to development of an all-weather airways system has been the better agreement between the military (who looked earlier at the team for their system) and the Civil Aeronautics Administration which was firmly committed to a VHF radio airways system including the cross-directional range and instrument landing system.

Support to Congress—Congress last year slashed airways funds by 50 percent because of these disagreements and made it clear that there would be no further substantial airways appropriations until the aviation industry both military and civil agreed to a program that would serve all equally well. The RTCA program is the proposed answer to this Congressional requirement.

Government agencies backing the agreement include the Air Force, Navy, CAA, Civil Aeronautics Board, Civil Guard, State Department and Federal Communications Commission. Private aviation interests backing include the Air Transport Association, Air Line Pilots Association, Aircraft Owners and Pilots Association and Radio Marine's Aeronautical Association. With this unanimity and approval of the Congressional Air Policy Board, the RTCA program represents an excellent chance of getting an appropriation to begin work on the airways program.

Basic Requirements—The RTCA airways program is aimed at meeting two basic requirements:

1. Providing continuous air transport with the reliability and regularity necessary to make it a profitable portion of the nation's transportation system.

2. Providing positive and continuous identification of all aircraft aircraft over the United States which is necessary for efficient operation of a military electronic warning system to detect enemy attacks.

Before Los Angeles—There is strong indication that next action on the RTCA program may come to be the most effective remedy for the current and state of airline disaster. A study made by the Air Transport Association on effect of bad weather on airline revenue disclosed that during 1946 the airlines lost \$75,500,000 directly attributable to effect of weather on operations. Of this total \$20,000,000 was due to schedule cancellations, \$12,000,

000 due to decreased load factors caused by seasonal schedule irregularity and \$21,000,000 due to bad weather traffic jams at 33 major airports where the study was conducted. Losses not included in this study occurred at other airports and on non-scheduled and military operations.

The interim program calls for acceleration of the present CAA program of improvements but warns that this program must eventually be replaced by more accurate devices. For interim landing aids it recommends ILS supplemented by GCA as major airports. Addition of radar traffic control, VHF direction finding, distance measuring equipment, automatic offset flight computer, automatic radio identification beacon and use of private line improved communications links are other principal features. Cost of the in-

terim program is estimated at \$376,200,000.

Target program calls for development of new equipment to provide reliable visual navigational communications to insure individual pilots' ability to perceive, identify and course bearing, an airborne device that will present traffic information, weather data and approach procedures visually, and an automatic approach computer. Ground traffic control equipment will include an automatic traffic control device that will receive all flight data from aircraft and provide safe separation and steady traffic flow to terminal area, automatic landing and taxi control and an automatic surface traffic display that will give a complete picture of all traffic in the approach area. All of these automatic devices will be subject to human override in emergencies.



CAB NOMINEE

Harold A. Jones, 49-year-old Los Angeles attorney, has been nominated by President Truman to take the NACA vacancy left by the resignation of Charles M. Young last October. He is confirmed by the Senate, Jones, a Republican, is slated to fill out the remainder of a one-year term which expires Dec. 31, 1952.

and to reduce power requirements was established.

• Flying Boats—New data indicate an expensive future for the flying boat with tank tests demonstrating that large, narrow hulls can provide reduced drag, reduced structural weight, increased speed, speed and payload for new types with no requirement of water landing facilities.

• Power Plants—The possibilities of increased fuel consumption leading to new growth for turbojet, turbo-prop and conventional engine types were explored. Detailed studies of test series of materials, turbine blade stresses and compressor vibration produced new design data facilitating greater accuracy.

• Fuel—Studies of high energy fuels, which can be used in this way, are under way. It was determined that so-called "safety fuel" pose operational problems hampering engine performance and fuel storage difficulties in flight.

NACA Sees Research Progress

Studies in theoretical work wiping out longtime European lead.

An amazing U. S. lead in recent basic aerodynamic research is indicated by the National Advisory Committee for Aeronautics' annual report submitted to Congress last week. Most significant during 1947 was progress in theoretical research. This is a phase in which the United States is now rapidly overtaking the 10-year leadership of European countries, particularly Germany.

Outstanding experimental results of the year include:

• Boundary Layer Control—Increasing emphasis is being given to research with promise of drag reduction and lift increase on thick airfoils already being realized. Boundary layer methods near leading edge of delta wing and airfoils, provision of flow to higher attack angles than hitherto achieved.

• Supersonic—Expansion of theoretical work greatly broadened the base for

future experimental work. Highlighted program, largest phase of entire NACA research, produced great quantities of results useful for design of transonic and supersonic aircraft and missiles. New supersonic airfoil shapes such as double wedge, crozier arc, etc., were tested and their aerodynamic characteristics determined.

• Aerodynamics—Blowing—The leading edge of transient and supersonic flight has been thoroughly analyzed as to its effects on lift and drag. Results indicate that above Mach number 1.0 these problems may prove of only minor importance.

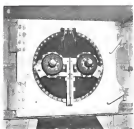
• Expansion—Complete design charts were prepared enabling an engineer to simply plug in the data he needs for the design of general aircraft propellers in a wide variety of airplane speeds, engine power and propeller diameter.

• Helicopter—Advances of complex mathematics to simplified form will aid designers in their study of future helicopter. The importance of rotor blade construction and low rotor speeds as an



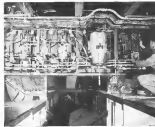
NAVAL JETS AT NORTH AMERICAN

North American's F4U production line is now adding an F4U to the group at North American's Inglewood, Calif., plant under the 50 of the new Navy fighter. Shown above are naval training Navy acceptance.



Unveil Constitution's Design Highlights

1. ENGINE MOUNTING—Lockheed Constitution's first jet holds power egg with four bolts at locations shown in drawing of wing junction. Large lower duct serves for engine exhaust while rectangular duct, directly above, is connected to engine heat exchanger and leads into heating and air conditioning system. Crown in that power egg can be changed, ranging to oval, in 30 sec. **2. WING TUNNEL**—Exits from fuselage, hinged to forward wing section, extend beyond outboard nacelle, then turn aft toward mid-chord area, and continue to end of outer wing panel. Moreover beyond outer nacelle is converging flow area containing necessary equipment, all at least 25 ft. **3. SAFETY FEATURE**—Inexpensive friction-free latch is installed inside plane commander's seat on flight deck, 25 ft. above ground. **4. CARGO HANDLING**—Lower cargo deck bays are fitted with Lockheed-designed electric hoists which using cables for storage in flight. Platform is ground equipment. Hatch massive pressure door is moved by hydraulic hand pump lowered by bleeding hydraulic line via hand valve. **5. CABIN HEAT**—Stainless steel tube carries engine heat length of fuselage forward and, and bleed ducts serve those heat exchangers controlling cabin air. Most heat waste heat is dumped outboard after passing through exchangers. Recirculation of cabin air (75 percent) leads with body structure is charcoal-filtered and minimizes humidity problems at altitude. **6. MAINTENANCE FACILITIES**—At forward end of lower deck cargo section, removal of protective panel exposes, for easy servicing, silicon boost mechanism, ducts for cabin pressure and cabin and emergency heating, and four frames holding tubes with activated charcoal for air filtering. **7. SPARE UTILITY**—Rear line of spar in fuselage carries hydraulic fluid reservoirs, valves, and plumbing. Angle views permit wide viewing of hydraulic and oil lines for easy access. **8. PRESSURE BULKHEAD**—Rear section of fuselage has bulkhead with hinged door (to the cabin) housing two emergency relief valves and large valve for venting of air if cabin pressure falls below that of outside atmosphere. **9. EARL DETAILS**—Typifying massive construction are elevator and rudder torque tubes in stabilizer rear spar, booms which can be seen accessory compartment and access door in fuselage. **10. FINGER TIP DOOR**—After cocking, light tug on door swings it upward for sliding along cable wall on support bars. Door mounting, Lockheed's design, gives downward contact with pressure seal ring before final locking.



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Research Reviews

"Escape"-Rocket Design Research Indicates Practical Solution Near

Studies show feasibility of exploratory space-missile design embodying "step" rocket motors utilizing only present-day fuels.

By ROBERT McARTHEN

Fundamental knowledge for the design of a rocket capable of escape from the earth's gravitational field is already available. Design studies of such rockets have already been made and only solutions to such problems as navigation, flight control, and radio-navigation remain before projects are initiated and actual construction of an extraterrestrial rocket begins.

Further advanced is an exploratory rocket carrying a wide variety of hardware, which would automatically receive ground radio signals to provide tracking data on the journey through space. This rocket would be driven by a motor using only fuels already in use without the delay required for the utilization of nuclear energy for propulsion.

Escape-Rocket Details—The rocket, designated as REX (rocket, escape, experimental), is a five-step design weighing more than 400 tons and for a speed more than 30 times that of sound. As built, its first rocket motor would develop 3,000,000 lb. of thrust. However, this unique vehicle would only be 130 ft. long and 13 ft. in diameter.

Escape from the earth's gravitational field is simply a question of velocity, that is, if an object can be accelerated to a high enough speed, it will move out into space and into the gravitational field of another planet before the decelerating effect of the earth's gravitational field can halt its flight. This velocity at the earth's surface is 36,780 ft. per sec. or about 25,000 mi. per hr.

Velocity Factors—Two factors determine the possibility of a rocket attaining this terrific velocity. First, the mass quickly the fuel is consumed the higher will be the rocket speed, thereby placing a great demand on fuel-burning fuels, which provide high exhaust velocities. Highest exhaust velocity possible, using presently available fuels, is only about 12,000 ft. per sec. less than one-third that required.

Second factor is the mass ratio of the

fuel contained in the rocket to the gross weight of the rocket for firing. A factor shows something less than 10. The higher this ratio, the faster the rocket will be moving at the end of its burning time. From considerations as to the density of various rocket fuels, their practical exhaust velocities, practical combustion pressures, and the weight and use of waste material, a mass ratio of 0.999 would be required to attain escape velocity, and such a ratio is obviously impractical. Therefore, neither the exhaust velocity nor the mass ratio of present rocket fuels would permit the attainment of escape velocity in a single rocket.

"Step" Data—However, if a series of rocket motors arranged in "steps" (in which the motor drops from the rocket after its fuel has been exhausted) were used, this step would suggest the pressure rocket speed until the desired escape velocity had been obtained. A rocket, burning until it was exhausted, with the next step automatically firing immediately upon exhaustion of the preceding step so that the total burning time is kept at a minimum.

Basic factor in the design of step rockets is the velocity ratio, which consists of the velocity of the rocket after all steps have been exhausted gives the acceleration of gravity at the earth's surface, this quantity being multiplied by the total duration of powered flight, and the total result being divided by the average exhaust velocity of the motor.

REX consists of five rocket steps burning solid-fuel fuel which has an exhaust velocity of 7,500 ft. per sec. Each step requires a burning time of 40 sec., or a total burning time of 200 sec. for the rocket. At completion of the time, the rocket will be at an altitude of about 600 mi. where escape velocity is only 14,300 ft. per sec. These data give a velocity ratio of 5.57. This ratio will require a rocket weighing 80,000 lb. made up of five steps, weighing 78,000, 75,300, 75,800, 825, and 90 lb., the last (rod fuel) step weighing

forming the solid equipment. Actual burning thrust of each step is 3,000,000, 161,600, 72,000, 1,340, and 390 lb. After this final 390 lb. rocket has completed firing, REX would be traveling at escape velocity and have moved out in space into the gravitational field of its target.

Other Design Studies—While REX is currently the most practical design method as it uses conventional fuel and requires no special design or fabrication techniques, other studies indicate greatly improved efficiencies if the techniques and materials for handling their special fuels can be developed. For example, when an oxygen-hydrogen motor is burning paraffin, a five-step rocket capable of escape velocity could be designed weighing only 5,720 lb. (considerably less than a Genesee F8P boost rocket) and would only require an initial thrust of 46,000 lb. This tremendous reduction in escape velocity rocket size indicates clearly the possibility to be expected from high-performance rocket fuels.

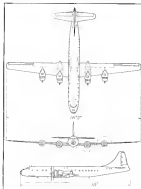
A sequential list concerning high-velocity rockets is the critical requirement of payload. The solar beam equipment designed for REX weighs only 10 lb. This modest payload was also used in the design study using oxygen-hydrogen fuel. If this payload is increased to 10 lb., the weight of the rocket is increased in proportion, that is, from 5,720 to 83,200 lb. This tremendous increase results from the acceleration of the rocket on the main main factor.

Increasing the number of steps is an economical method for improving the rocket design, provided the number is kept fairly small. Thus, if REX is equipped with 10 steps instead of five, the gross weight is reduced from 83,200 to only 136,000 lb. and the initial thrust required is reduced from 3,000,000 to only 150,000 lb. However, as the steps increase beyond 10, the proportional decrease in gross weight becomes increasingly smaller, resulting in an optimum number of steps for a given design. Additional steps introduce more structural and operational problems which may outweigh the velocity and weight advantages.

Practical problems include separation of step units and effect of step removal on main body. As the step assembly drops away, the rocket's main distribution is changed. The spent step must drop clear of the main assembly without disturbing its motion.

Reference

Melvin, Frank J. and Sumnerfield, Milton. The Problem of Escape From the Earth by Rocket, *Journal of the Astronautical Sciences*, Aug. 1947.



Soviet Transports

Designs for two Russian transport planes—the Tupolev TU-70 and the Ilyushin IL-18—began for use in the Soviet's extensive home routes, follow the lead of the United States and England in the construction of four engine vehicles.

The 72-passenger TU-70 (photos and diagram on this page) was designed by Andrei N. Tupolev, and was first exhibited publicly Aug. 4, 1947, at the Aviation Day celebration at Tushino Aerodrome, Moscow.

Some time ago, USAF officials stated that they believed the USSR was building a direct copy of the Boeing B-29 (several B-29s are known to have fallen into Soviet hands, including some which were landed in Manchuria in 1945).

The TU-70, it now appears, is a transport version of the Russian "B-29" and it was the prototype of the transport which appeared at the celebration.

The similarity of shape (fuselage, wing, and nacelle) is too striking to be coincidental, and the transport section of the nose is identical to that of the B-29.

► **Wing Layout:** The wing has been lowered to allow easy access between the nose section and the passenger compartment, and this also permits use of larger wing fences.

A further modification is noted in the step-down on the upper contour of the pilot's cockpit, probably to increase visibility.

The plane is intended to test medium application of the bomb-bus design. However, the cockpit version has only the nose section preserved. Since the B-29 pressurization system was applied not only to the nose section but also to the wing part and tail gun positions and the connecting tunnel between the nose and wing, apparently the Russians have not attempted, thus far, to install a pressurization system lighter than that in the B-29, to encompass the entire occupied portions of the fuselage.

► **Fuselage Lengthened:** Compared to the B-29's 99 ft., the TU-70 fuselage appears to have been lengthened to about 119 ft. It may be altered from the picture that the fuselage diameter has also been increased. This diameter increase may have necessitated the cockpit step-down previously mentioned.

The wing span measures about 141 ft.

In making the nose modification, a navigator's airframe has been added just ahead of the windshield.



TU-70 liner is B-29 copy, with minor changes. IL-18 and 12 also analyzed.

The new wheel type landing gear is not new to Russian design, but in this plane its structure appears closely akin to that used on the Boeing bomber.

Comparison of the accompanying TU-70 illustrations with the picture identified as the Ilyushin IL-18 in *Aviation Week* Sept. 22, 1947, indicates that the photograph in that issue, while labeled by the Soviet's engine agency as "The new Ilyushin plane," is the Tupolev TU-70.

► **Ilyushin Compared:** The other four engine transport, the Ilyushin IL-18 (this page, top and center), also made its debut at the Aviation Day celebration last August. It is a 66-pass plane (specifically mentioning the British Aero Travel Vell) and is evidently a scaled up model of the Soviet sea-going transport, the IL-12 (this page, bottom).

The IL-18 is an original design utilizing four ASH-62 air-cooled, 14-cylinder, twin row, radial engines in Russian design based on the Wright Dwyer engine, mounted centrally in the wing. This unit is reported to be 351 lb. This aspect of the low wing on the IL-18 is suitable for the large wing root fairing, while the front elevation emphasizes a large air intake under each nacelle, giving a bulky rather than a streamlined appearance.

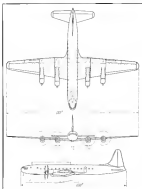
Retractable nose wheel and main landing gear are equipped with dual wheels as an added safety feature.

► **Fuselage Characteristics:** The unbroken 109 ft. line of the circular section fuselage indicates that this plane probably has a pressurized cabin. The entrance door is located at the rear of the plane on the starboard side, though an uncertainty report indicates the possibility of a port side entrance. Accommodations have been made for 60 passengers plus a crew of six (including a stewardess).

Cruising speed is estimated at 300 mph.

The IL-18 has also been reported as the type selected for use on the Aeroflot (Russian Air Line) route between Moscow and Khabarovsk (near the northeastern border of Manchuria)—a distance exceeding 5,000 miles. This would leave the shorter range IL-12 to cover the routes that had connecting routes.

The two-engine Ilyushin IL-12 is likely the Soviet replacement for the Curtiss biplane DC-3 in use on short-line operations. It has a seating capacity of 27 and is said to be about 60 mph. faster than the Douglas plane.



Region One Operators Seek Better Public Relations on Local Level

Fourteen states join in experimental program to promote private flying; Bollinger warns the New York Aviation Trades Association of civil aviation crisis.

A long-range public information program in behalf of the fixed base operators of northeastern states, planned at a recent New York meeting, may develop into a national program along similar lines of the type in the first region of the National Aviation Trades Association shows good results.

Designed to tell the public about the facilities and services of the fixed base operators in the 14 states of the region and to whet the public appetite for buying and flying airplanes, the new plan is the first concerted operator effort in postwar years at least, to aid private and business flying "across the board" in a continuing program, without regard to individual profits being merchandised.

Charles Perkins, public relations chairman for the New Jersey NATA, was

named to head an organization of 14 state public relations committees, to be designated as a regional committee for information and dissemination of public affairs policies.

Operator's Place-Detroit mail circulation of professional literature through the work of the local fixed base operators and the plan he felt in his community, state and nation will be an early project. The pamphlets will be aimed at state legislators, chambers of commerce, and other local residents and local newspapers.

Encouragement of continuing local public relations programs by each operator will be another feature of the 14 state program. Frequent contacts and cooperation with local newspapers and radio stations, local advertising programs as well as participation in civil

aviation shows will be emphasized. In doing this, NATA vice president of region 1 who presided at the New York conference, sounded a caution warning. "Unless we take the initiative now, and reach the local public at the grass roots, at our peril."

He urged the association to take early steps to develop a new national of public relations literature, outlining simple steps which the individual operator can use to reach the potential customer in his own area.

State Committees-State representatives indicated their willingness to support the program financially by contributing of \$50 per state, for a total period. First meeting of the 14 state public relations committee is expected to be held somewhere next month in New York.

Cautions among fixed base operators will be heavy in the next few years, Dr. Louis Bollinger, of Harvard University Business School, forecast at a New York Aviation Trades Association meeting which followed the first region session.

During his comments as a recent national survey conducted among fixed base operators, Dr. Bollinger said that the next 10 months will tell whether much of the personal aircraft industry can survive. "It is up against a complete and immediate crash," he declared.

Now Looking-The speaker described details of the Aeronautical Research Foundation experiments in aircraft noise reduction at the Wright Airbase Base, Norwood, Mass., and in downtown Boston (Aerobase House, Dec. 27, 1947 and Jan. 15, 1948) and urged the importance of these findings speedily to make useful small closed landing areas. Technical knowledge has been available for years to produce such a plane, but it has never been marketed to the public. Only a combination of noise reduction and convenient closure landing areas near the ultimate destination will make the personal airplane a mass market commodity, he declared.

"There will always be only a few people who like to fly for sport and they will support a small segment of fixed base operators. But the mass market will not be reached unless the airplane becomes a much more useful vehicle." The Harvard analyst believes that fixed wing aircraft can be built to do almost everything that the helicopter can do in landings and takeoffs in restricted areas without some of the inherent difficulties in construction due to rotor design.

Officers Named-Guy A. Hain, Jr., Chief Pilot, N. Y., was elected president of NATA. Other officers elected are Jack Drueker, Buffalo, vice president; Joseph Privitera, New York City, treasurer; and Charles H. Gale, Danvers, Conn., secretary.



NEW PIPER VAGABOND PA-15

Two photos of the new 1948 Piper Vagabond PA-15, lowest priced plane offered on the market at \$7999 (base) Lock Haven, Pa. shows the plane in close landing gear in the foreground. The Piper Vagabond PA-15 is a 48 hp. Leaning engine. Vagabond has a 26 ft. 3 in. wing span, and a 6 ft. 6 in. wheel base. Controls are conventional stick and

radio. Automobile type door gives ready access to cabin, and is detachable from the landing door and can lock. Features include dual control seating for two, cruising speed 160 mph, top speed, 110 ft./min. rate of climb, 12,500 ft. service ceiling, normal range, 300 mi. with 12 gallons of fuel. Construction is steel tube and fabric. Weight of the plane empty is 620 lb. and normal gross weight is 1100 lb.

Piper to Market Family Cruiser

New four-place model will sell for \$8,125, deliveries to begin next month.

First of the Piper Aircraft Corp. model 117, Family Cruiser, priced at \$8125 (base) Lock Haven, Pa., was to leave Lock Haven last week.

With J. W. (Jack) Miller, sales manager, at the controls, or a demonstration flight to the West Coast. Deliveries to dealers are scheduled to begin in a month.

Already certified by CAA, the four-place (as predicted in Aviation Week, Dec. 15, 1947) is the lowest priced four-place airplane on the 1948 production line. Records up are the 145 hp. Aeromarine Sedan (\$8475) and the 145 hp. Crusier Model 70 (\$9175).

Largest Model-Displaced the PA-14 the Family Cruiser is the largest of its place in a complete line of base 1948 Piper Models. The new line includes the new two-place side-by-side 65 hp. PA-17 Vagabond at \$1999 and two versions of the PA-13 Cub special edition in base at \$2495 with 65 hp and \$2572 with 90 hp engine.

The new Piper four-place is equipped with flaps. As a result it has a slower landing speed than its predecessor. The 1947 three-place 100 hp. Piper Special, despite the additional load, carried Performance figures quoted as a climb landing speed of 43 mph, 130 mph cruising speed, and 123 mph top speed. Plane weighs 1900 lb. empty, and 1850 lb. gross. This means it can carry four without loading or three with baggage for an extended flight.

Basic Design-Basic design is similar to the three-place Piper Super Cruiser, which was the second biggest seller in the 1947 over two-place model last year. (Stinson sold 2662 four-place Vag-

abond.) Engine used is a Lycoming O-235 C-1 rated at 115 hp. Engineering changes in the induction system are used to give an additional power boost. Production plan call for an eventual use of the Family Cruiser in other at Lock Haven.

Interior of the Family Cruiser is upholstered in Nungahua, a leatherlike material. An enlarged luggage compartment is provided and the rear seats are designed for quick removal to provide additional cargo space. The steel control used in the three-place Cruiser is retained.

Model-Model-On the basis of Piper's 1947 sales record, additional sales of the new model, and the lowest price in the four-place class, it should offer a serious bid for top sales in 1948. Production schedules will probably have considerable effect on its positive sales along with those of the other new four-place models on the market.

Competitors already in the four-place market whose models are changed only slightly from base at last year (Stinson Beech, and Bellanca) will have a critical production advantage.

Lightplane Engineers Shifted to New Jobs

Peter Almona, Detroit consulting mechanical engineer, and specialist in light airplane design, has been appointed vice president of Continental Motors, in charge of the new Multi-Pool division, C. J. Keene, Continental president has announced. Almona has been on Continental's staff as consultant and chairman of the engineering council for the last five years. He was head of the University of Detroit's mechanical

engineering department for 12 years. He will have offices in Detroit, where the new Multi-Pool, a product of Continental to be announced soon, will be manufactured.

Lynne W. Natta, vice president, engineering, Leaseway Airplane Corp., Dallas, has been named and succeeded as chief engineer, by H. C. Erickson, advanced from chief structural engineer. Natta was director of technical services at Aeronautical Industries Association before coming to Leaseway two years ago. He will return to Washington, after a brief flying vacation in the Southwest. Erickson was in years in the engineering department at Beech Aircraft Corp. before going to Leaseway.

R. M. Phelps Succeeds Swenson in NAA Post

Eliot R. M. (Bob) Phelps, a manager of the National Aeronautic Association, succeeding Lowell H. Swenson, who resigned as executive vice-president of NAA, was announced following a Cleveland meeting of NAA board of directors. Phelps, a retired aircraft instructor, who has been serving as conference manager of NAA for the last two years, succeeds his new partner Mark L. Swenson is going into private business in Chicago. Phelps was a military pilot in World War I, and is known for his management of the National Aviation Council of the last two years in Springfield, Ill. and Oklahoma City.

New CAP Bill

Bill to establish Civil Air Patrol as a civilian auxiliary of the U. S. Air Force and to authorize extension of aid by Secretary of Air Force to CAP has been introduced in H.R. 5709 by Rep. John W. Caldwell, and has been referred to the House Committee on Aeronautics.



AMBULANCE BONANZA

Quick conversion of several leading four-place personal planes, for use as ambulances, are extending their utility into a field previously closed to larger models. Above photo shows Bonanza conversion, with little conversion, which provides space for nurse and pilot in addition to patient. Ben Norton and Stinson Voyager are other four-place models which have successful ambulance conversions.

EDITORIAL

James H. McGraw Set the Standard

James H. McGraw, founder of McGraw-Hill Publishing Co., died Feb. 22, at the age of 87. His influence on business paper publishing was enormous. Until his appearance the "trade paper" was usually an instrument of racketeering and blackmailing, in varying proportions.

In aviation, confronted with struggling periodicals, his concepts have special meaning in these days of carefully budgeted advertising allowances.

The first thought was for the reader. He ignored self-seeking postures and refused to align himself with powerful but unrepresentative cliques, for he knew they were artificial and unworthy of conscientious editorial support.

For there is industry, with courage to break away from routine and tradition, to seek new standards of quality and public service. He was a courageous, dependable ally.

He was a practical idealist, with "high standards of dissatisfaction." His healthy impatience for improvement was reflected in the quality of his publications. He had tremendous faith in industry's ability to raise its standards and solve its own problems. His magazine became critical but constructive, reporter of the significant, technological developments, industrial trends, economic evolutions, interpreted by the best men he could obtain, compared the men of his period, long before news magazines' approval. He acknowledged no substitute for a publication of superior quality.

Mr. McGraw once described independence of a publication as first among virtues. "The determination of a journal to be its own master, to have no other guides for its opinions and policies but truth and the sacred interests of the field it serves." The publisher who stands fast who protects the integrity of his writing pages will have the satisfaction of knowing that he has kept faith with his conscience and his readers.

The right-minded publisher knows that he has a contract with his subscribers—a contract to be honest with all and to do harm to no one who is passing an honest course.

His attitude toward the reader, whether employer or employee, should extend those who depend on the author's pen.

"We as business publishers owe our primary responsibilities to the business, to the industries and commerce of America. But eventually our accountability, as well as that of business itself, is to the whole American people."

It is important . . . that the business press stand upon solid ground and fight without tiring for economic and governmental soundness . . . for a system of checks and balances in business, in government, in the social system,

so that no group or faction—not even business itself—will wield a tyrannical dominance."

And in so on when every phase of aviation is fighting to hold whatever gains it has made, tempted by short cuts and expedients, James H. McGraw's instructions to his editors on the American way of life are significant.

"The business press should stand for enlightened business policy—for fairness to the concern of business, to the employee and to the public. It should urge that businessmen think rather of their responsibilities than of their rights. It should, above all, stand for the principle of individualism in American life, making the sole reservation that that individualism shall not transgress the rights of others. . . . If today our people enjoy the highest standards of living of any people . . . it is because of the stimulus afforded by the individual initiative and risk on which our business is founded."

Now McGraw-Hill magazine which lost ability to view its own industry in perspective was true to bring down a screen from "the old man." He said once:

"Of more importance possibly than the relation of the business press to a recorder and a clearinghouse of ideas in its professional relation to its industry or trade. The editors of the business press have the opportunity both to be a part of an industry and to stand on the sidelines looking out over an industry. This can not, because of their exceptional opportunities for investigation and association with leaders of their particular fields, the great benefit of an industry. They can help and do help out and cut the cost of the industry, and they have a sense of responsibility toward the public which that particular industry may serve which is one of the fundamental values of the business press. . . . The great journals of industry have been built on this conception of service."

No business press which seeks to make its living off its industry, rather than for its industry, can rise to respected leadership. No industry magazine which fails to criticize constructively and fairly can maintain its reader's confidence. No industry magazine which ties itself to a flattering minority, to obtain special favor, can long survive on such an unhealthy diet.

All of these things James H. McGraw knew. His ability to express them exceeds him. His thoughts reproduced on this page can give our readers some clue to the kind of magazine American Week strives to be—inspired, of course, by the ever-present human frailties.

—ROBERT H. WOOD

FOR SAFER NIGHT FLIGHT...

Contour Lighting WITH "LUCITE"!



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Use
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Boeing Stearman



Boeing Stearman



Boeing Stearman

TO SOLVE the pilot's bugaboo of confusing another plane's lights with stars or glaring ground lights, the U. S. Navy is currently testing a new method of aircraft illumination: "contour lighting" with DuPont "Lucite" acrylic resin.

Screened strips of "Lucite" are attached to the wing tips and trailing edges of the tail assembly, replacing the present single points of light. The light from tiny lamps is transmitted by the strips, which in turn, because of the excellent light transmission of "Lucite," glow and fully outline the contours of the plane. In addition, "Lucite" can be

molded or formed to extreme contours . . . yet is strong and durable. And it stands up to weather and sunlight without warping or yellowing.

This is just one of the new developments in aircraft parts which have been materially improved with DuPont plastics. Aircraft manufacturers use "Lucite" as standard equipment on all types of planes for windshields, endowings, cabin windows, and instrument panels. Write for facts on "Lucite" and other DuPont plastics that may be of help to you: E. I. du Pont de Nemours & Co. (Inc.), Plastics Department, Room 223, Arlington, N. J.

Time in DuPont "Corvette of America" Mondays, 8 P. M. EST, NBC

FOR VISION—"LUCITE" transmits over 90% of light rays. Can be formed in one piece eliminating ribs and blind spots.

FOR SERVICE—"LUCITE" stands up to the weather, hot or cold. Does not warp. In normal service, lasts for the life of the plane. "Lucite" is shatter-resistant, light in weight! Has good dimensional stability, resists vibration.

FOR INSTALLATION—"LUCITE" is easy to install and care for. It costs even less, in medium and greater quantities, than other plastic materials used.

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Stilts for the Big Boys



PRECISION PRODUCTS
AND
ENGINEERING SYSTEMS
FOR AIRCRAFT

GENERAL ELECTRIC turbosuperchargers—the “stilts” that permit higher altitude flights—have received their first commercial application on the Boeing Stratocruiser, latest in luxury airliners. This huge commercial aircraft is to be used by several of the major airlines for high speed, economical transcontinental and transoceanic flights. The use of the turbosupercharger is expected to save up to 14 per cent in fuel consumption at cruising altitudes, which will result in a substantial decrease in operating cost and an increase in the range of the plane.

As plans for new commercial planes and airlines get underway, the research, design and manufacture of equipment for them are being carried on in G.E.'s aircraft engineering laboratory where complete systems can be tested. From lighting and ignition systems to jet engines and turbosuperchargers, General Electric is prepared to handle your aircraft equipment needs. For more information and any recommendations you desire, get in touch with your nearest G-E office or write us. *Apparatus Department, General Electric Company, Schenectady, New York.*

GENERAL  **ELECTRIC**